

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: <b>Wood, Douglas</b> Serial No. <b>10/689,500</b> Filed: <b>10/20/2003</b> For: <b>“SYSTEM AND METHOD FOR ROOT CAUSE LINKING OF TROUBLE TICKETS”</b>	Group Art Unit: <b>2114</b> Examiner: <b>ASSESSOR, Brian J.</b>  Confirmation Number: <b>4256</b>
--	--

APPEAL BRIEF

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

May 25, 2007

Sir,

Pursuant to 37 C.F.R. § 41.37, in view of the Notice of Appeal filed on March 7, 2007,  
Applicant submits its Appeal Brief according to the following Table of Contents:

Real Party in Interest .....	2
Related Appeals and Interferences .....	2
Status of Claims .....	2
Status of Amendments .....	2
Summary of Claimed Subject Matter .....	2
Grounds of Rejection to be Reviewed on Appeal .....	3
Arguments .....	4
Summary of Arguments .....	4
Detailed Arguments and Citations to Authority .....	4
Conclusion .....	8
Claims Appendix .....	9
Evidence Appendix .....	12
Related Proceedings Appendix .....	13

### **REAL PARTY IN INTEREST**

The real party in interest in the present application and Appeal is International Business Machines Corporation, New Orchard Road, Armonk, New York 10504.

### **RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences.

### **STATUS OF CLAIMS**

Claims 3 and 10 have been cancelled.

Claims 1, 2 and 4-9 are pending.

Claims 1, 2 and 4-9 stand finally rejected.

Claims 1, 2 and 4-9 are being appealed.

### **STATUS OF AMENDMENTS**

No amendment has been filed subsequent to the last Office Action.

### **SUMMARY OF CLAIMED SUBJECT MATTER**

#### *Claim 1:*

The present invention, as recited in independent Claim 1, is directed to a system that provides root cause failure information about a computer system to a user (*See, e.g.*, ¶ [0023]). A monitoring application monitors a plurality of assets in the computer system and a system incident report (FIG.3, item 304) is generated when a failure of an asset in the computer is detected by a monitoring tool in the computer (¶ [0053]).

A diagnostic database (FIG. 3, item 209) lists a set of activated symptoms (FIG. 3, item 211) associated with the failure (¶ [0053]). A symptom is activated when the monitoring application detects a failure linked to a pre-identified symptom (¶ [0050]).

An incident tracking application presents a set of activated symptoms to the user

(¶ [0054]). The incident tracking application receives a user incident report (FIG. 3, item 302) from the user and associates the user incident report (FIG. 3, item 302) with a system incident report (FIG. 3, item 304) when the user incident report includes a user-observed symptom that corresponds to one of the activated symptoms (¶ [0054]).

*Claims 2, 4 and 5:*

Claims 2, 4 and 5, which depend from Claim 1, are not argued separately from Claim 1.

*Claim 6:*

The present invention, as recited in independent Claim 6, is directed to a method for providing root cause failure information about a computer system to a user (¶ [0023]). In the method, a diagnostic database (FIG. 2, item 209) is pre-populated (FIG. 4, item 404) with a plurality of pre-identified symptoms (FIG. 2, items 206, 207, 208 and 212) (*see, also*, ¶ [0049]). Each symptom is linked to at least one failure of an asset (¶ [0048]) and the assets are monitored by a monitoring application (¶ [0051]). When an asset failure is detected, at least one of the pre-identified symptoms associated with the failed asset is activated (FIG. 5, item 506) in the diagnostic database. A resulting activated symptom list is generated and presented to a user (such as a service representative) (¶ [0053]). A user incident report (FIG. 3, item 302) that includes at least one user-observed symptom is received from the user and the user-observed symptom is associated (FIG. 5, item 510) with an activated symptom from the activated symptom list (¶ [0054]).

*Claims 7-9:*

Claims 7-9, which depend from Claim 6, are not argued separately from Claim 6.

### **GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

The following grounds of rejection are to be reviewed on appeal:

Claims 1, 2 and 4-9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Douik (6,012,152) in view of Hiliger (5,127,012).

## **ARGUMENT**

### **A. SUMMARY OF ARGUMENTS.**

This section summarizes Applicant's arguments. A more detailed argument and citation to authority is found below.

1. The Final Office Action erred in maintaining the §103 rejection where it failed to demonstrate that a combination of the cited references teaches or suggests activating a symptom from a list of symptoms in response to an asset failure.
2. The Final Office Action erred in maintaining the §103 rejection where it failed to demonstrate that a combination of the cited references teaches or suggests the association of a user incident report with a system incident report based on symptoms common to both reports.

### **B. DETAILED ARGUMENTS AND CITATIONS TO AUTHORITY.**

#### **1. BACKGROUND**

When an asset failure is detected, the system and method of the present invention activate a symptom (or symptoms) known to be associated with the failure of the asset and includes the activated symptoms in the system-generated incident report. When a user detects a symptom, the user generates a user incident report. When a user incident report is received, it is correlated to a given system incident report *based on common symptoms*. This symptom correlation of reports improves the chances that the detected symptoms are correlated with a root cause failure of an asset, rather than a failure of a subsequently failing asset. Given that complex computational systems often experience many levels of subsequent asset failures after a root cause failure, the system recited in the claims improves the chances of discovering a root cause failure early. Furthermore, given that most computational systems operate with a clock cycle well in excess of millions of cycles per second, a time correlation between when an asset fails and when the user detects a symptom of the failure (which could occur minutes or even

hours after an asset failure) would be almost meaningless in aiding a service representative in diagnosing a root cause of a detected problem.

The present invention activates symptoms relating to asset failures when the asset failures occur. The invention receives user incident reports (which could be generated well after the asset failure) independently of the asset failures. Correlation of an asset failure to a user incident report is based on the symptoms in the user incident report that have previously been activated (rather than according to when the reports are received). Because the service representative is provided with an indication of suspect aspects based on a list of symptoms that are activated when asset failures are detected that are correlated with the symptoms that are experienced by the user, the service representative is provided with a better indication of which asset is the likely root cause of the failure.

## **2. CLAIM REJECTIONS UNDER 35 U.S.C. §103(a):**

The Final Office Action failed to demonstrate that a combination of the cited references teaches or suggests each of the elements of the independent claims. “To establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art.” MPEP § 2143.03. However, as set forth below, the cited references fail to teach or suggest all of the limitations of the rejected claims.

*a. The Final Office Action erred in maintaining the §103 rejection where it failed to demonstrate that a combination of the cited references teaches or suggests activating a symptom from a list of symptoms in response to an asset failure.*

Both Claims 1 and 6 include limitations by which a symptom is activated upon detection of an asset failure and the activated symptoms are presented to the user. The Final Office Action asserts that this limitation may be found in Hiliger (Final Action, p. 3). Applicant traversed this assertion in the Amendment filed February 13, 2007 (Amendment, p.7). The Advisory Action issued on February 28, 2007, maintained the rejection.

The Final Office Action admits that Douik does not disclose an application in which a

set of activated symptoms is presented to a user and that receives “a user incident report that includes a user-observed symptom selected by the user that corresponds to one of the set of activated symptoms” but asserts that Hiliger discloses this limitation (Final Office Action, pp. 3, 5).

As asserted in the February 13 Amendment, this limitation is completely absent from Hiliger (February 13 Amendment, p. 7). The cited portion of Hiliger (col. 3, ll. 11-13 and 22-23) states that “a repair person is presented with a list of observable symptoms for each of which there is a know cause or causes.... the repair person selects the symptom from the list which best describes the situation.” This merely indicates that the apparatus disclosed in Hiliger presents the user with a generalized set of symptoms, which presumably includes every possible symptom that could be associated with every known failure of the apparatus. There is no indication in Hiliger that the list of symptoms is in any way limited to a set of symptoms that are “activated” by a monitoring application in response to a specific asset failure that has actually been detected by the system.

The present invention, on the other hand, activates symptoms with the monitoring application in response to a specific asset failure at the time that the asset failure is detected. This allows close correlation of a failure to a specific set of symptoms, which allows the service representative to localize a root cause of a failure more quickly by considering only failures that were previously detected by the monitoring application and that characteristically exhibit the activated symptoms. Merely presenting a list of all possible symptoms, as is disclosed in Hiliger, would not accomplish this advantage.

It is believed that since the Action admits that Douik fails to disclose this limitation and since Hiliger does not disclose this limitation, and given that Applicant presented arguments to this effect in the Amendment filed February 13, 2007, the Examiner erred in maintaining the rejection. Therefore, Applicant respectfully requests that this Rejection not be sustained.

- b. *The Final Office Action erred in maintaining the §103 rejection where it failed to demonstrate that a combination of the cited references teaches or suggests the association of a user incident report with a system incident report based on symptoms common to both reports.*

Claim 1 includes a limitation in which a user incident report is associated with a system incident report when the user incident report includes a user-observed symptom that corresponds to one of the symptoms activated upon detection of the failure that results in the generation of the system incident report. Similarly, Claim 6 includes a limitation by which a user-observed symptom is associated with a system-activated symptom. Common to both claims is the association of a user-observed symptom with a system-detected symptom

The Final Office Action asserts that this limitation may be found in Douik (Final Action, pp. 3, 5). Applicant traversed this assertion in the Amendment filed February 13, 2007 (*See, e.g., p. 5-6*). The Advisory Action maintained the rejection.

The Final Office Action relies on a single passage in Douik (col. 15, ll. 16-27) to support its assertion that this limitation is found in Douik. While the limitation in Claims 1 and 6 indicates correlation between a system-detected cause and user-observed symptoms *based on common symptoms*, Douik discloses only “a simple form of *time correlation*” (emphasis added) of alarms with trouble reports from the users (Douik, col. 15, ll. 16-20). In a computational system operating at a gigahertz clock speed, the time correlation disclosed in Douik would not likely be meaningful in the diagnostic process. (This is especially true, since users often do not notice symptoms of a failure for several minutes to several hours after the failure occurs. In a 2.0 gigahertz system, 120 billion cycles would pass from the moment of an asset failure until one minute after the failure. Thus, in a situation where a root cause failure is followed by a series of subsequent failures, a time correlation between a user-generated report issued just one minute after the root cause failure and a system-generated failure report would result in a correlation of the user-detected symptom and a subsequent failure occurring 120 billion cycles after the root cause failure!)

As asserted by Applicant in the Amendment filed on February 13, 2007, nowhere does Douik (or Hiliger) disclose any sort of correlation of user-observed symptoms with system-detected failures based on common symptoms (February 13 Amendment, pp. 5-6).

It is believed that since both Douik and Hiliger completely fail to disclose this limitation, and given that Applicant presented arguments to this effect in the Amendment filed February 13, 2007, the Examiner erred in maintaining the rejection. Therefore, Applicant respectfully requests that this Rejection not be sustained.

### CONCLUSION

For the reasons enumerated above, Applicant believes that the rejections in the Final Office Action were in error and requests that the outstanding rejections not be sustained and that all remaining claims be allowed.

No addition fees are believed due. However, the Commissioner is hereby authorized to charge any additional fees which may be required, including any necessary extensions of time, which are hereby requested, to Deposit Account No. 09-0461.

May 25, 2007

Date



Bryan W. Bockhop

Registration No. 39,613

**Customer Number: 25854**

Bockhop & Associates, LLC  
2375 Mossy Branch Dr.  
Snellville, GA 30078

Tel. 678-919-1075  
Fax 678-609-1483  
E-Mail: bwb@bockpatent.com



### **Claims Appendix**

1. A system for providing root cause failure information about a computer system to a user, comprising:

a monitoring application that monitors a plurality of assets in the computer system and that generates a system incident report when a failure of an asset of the plurality of assets is detected;

a diagnostic database that lists a plurality of pre-identified symptoms, including a set of potential symptoms, each pre-identified symptom being linked to at least one failure of an asset, wherein a potential symptom is activated when the monitoring application detects a failure linked to the pre-identified symptom; and

an incident tracking application configured to present to the user a set of activated symptoms that characterize a current state of the plurality of assets, the incident tracking application also configured to receive from the user a user incident report that includes a user-observed symptom selected by the user that corresponds to one of the set of activated symptoms the incident tracking application also configured to associate a user incident report with a system incident report when the user incident report includes a user-observed symptom that corresponds to one of the set of activated symptoms.

2. The system of claim 1 further comprising an incident tracking database for storing the user incident reports.

3. (Cancelled)

4. The system of claim 1, wherein the system incident report is stored in the incident tracking database.

5. The system of claim 1, wherein the diagnostic database further stores a plurality of solutions, each solution being associated with at least one pre-identified symptom.
6. A method for for providing root cause failure information about a computer system to a user, comprising the steps of:
  - pre-populating a diagnostic database with a plurality of pre-identified symptoms, each pre-identified symptom being linked to at least one solution;
  - linking each pre-identified symptom with at least one failure of one asset;
  - monitoring a plurality of assets;
  - upon detecting a failure of an asset, activating at least one pre-identified symptom associated with the failed asset in the diagnostic database, thereby generating a activated symptom list;
  - presenting the activated symptom list to the user;
  - receiving a user incident report from ~~an~~ the user, the user incident report including at least one user-observed symptom; and
  - associating the user-observed symptom with an activated pre-identified symptom from the activated symptom list in the diagnostic database.
7. The method of claim 6, further comprising the steps of:
  - retriving a solution associated with the activated pre-identified symptom; and
  - executing actions listed in the solution.
8. The method of claim 6, further comprising the steps of:
  - analyzing failure modes; and
  - devising the plurality of pre-identified symptoms.
9. The method of claim 6, further comprising the steps of:

creating a system incident report for each failure detected; and  
linking the system incident report to the activated pre-identified symptom.

10. (Cancelled)

Application No. 10/689,500  
Appeal Brief dated May 25, 2007  
Page 12 of 13

**Evidence Appendix**

[blank]

Application No. 10/689,500  
Appeal Brief dated May 25, 2007  
Page 13 of 13

**Related Proceedings Appendix**

[blank]